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rain, or whether to help the fly free itself from its incumbrance, or for both objects, is matter for conjecture.

This position of the stigmatic surface adds another to the many points of analogy between Apocynareæ and Asclepiadaceæ. There is, likewise, a wonderful resemblance in their mode of fertilization, at least, in the typical genera. If in any period of their history these quadruplex pollen grains of Apocynum should be massed together, and these upward pointing glands should reach and become agglutinated to the pollen masses, Apocynum would have to be classed with Asclepiads—with that section which has the glands below the pollen masses. It may be, as in the case of Orchids, that these similar contrivances have arisen independently; or it may be that Apocynum belongs to an ancestral stock from which the more perfectly specialized Asclepiad has branched off. It is even possible that the former is a degenerate descendant of the latter. Much depends upon the history of the peculiar glands of the stigma. I do not know that their origin has ever been accounted for in Asclepias. Brown in a masterly manner traced them from their first appearance as a furrow in the style, and perhaps nothing more can be done. In the more varied forms of Apocynaceæ, however, which seem to be the link between ordinary flowers and that very distinct tribe, it may be possible to trace them still further. One consideration persents itself forcibly in studying the structure of this flower, that is the multiplied series of organs, nine circles in all: 1, the five lobes of the calyx; 2, alternate with these the five lobes of the corolla; 3, alternate with these the five pink stripes forming a slight crown above ; 4, again alternating, the five triangular processes at the base of the lobes of the corolla ; 5, alternating with these, or, taking no account of these, with the divisions of the corolla, the five stamens ; 6, of course alternating, the five nectaries; 7, the diaphragm ; 8, the glands; 9, the bilobed style. The glands seem to be opposite the anthers, as are the lobes of the diaphragm also. What morphological value the most of these circles may possess, A. de Candolle has discussed (Ann. Sci. Nat., 3d Series, Bot., Vol. 1). He considers the diaphragm an extension of the filaments, but makes no mention of the glands. But these and other questions it is not my present purpose to pursue.

Two points, new perhaps, I think I have established—the position of the true stigma, and the mode of fertilization. W. H. L.

96. **ARCEUTHOBIUM shedding its seed.** — I visited the swamp in Warrensburg, the first week in October. I found the female plants of Arceuthobium nearly all gone; every effort that I made to cut twigs from the matted clumps, where the colonies of these strange parasites grow, brought them down in showers. Fearing that I should fail to get plants with full seed vessels, I picked a single plant with vessels very much swollen. While holding it gently between my thumb and finger, to observe it more closely, I felt the tiniest recoil of the capsule, and the seed struck me a smart blow in the face. I gathered another, and another, and each pretty little

bomb went off with a force that must have carried it several feet away.

The seed flies out of the base of the capsule, instead of the top, but its position on the plant makes that the top, as when ripe, the vessels hang with the true summit turned downward.

I found the seeds and empty seed vessels lodged all about on the branches. The plants which have ripened seed, fall off nearly together, those which have not blossomed, or have failed to be fertilized, probably remain for another year. When the seeds are being sown, there must be quite a brisk bombardment going on for several days. Isolated colonies of Arceuthobium in forests may have been planted by seed adhering to the feet of birds. L. A. M.

97. **Suffolk County Plants.**—I have found the following plants about here this summer, *Sarracenia purpurea*, L., at River Head, *Arabis perfoliata*, Lam., and *Camelina sativa*, Crantz., a single plant of each. *Reseda* Luteola, L., roadside, Mt. Sinai, L. I. with *Mentha aquatica* L., Var. *crispa*, Benth. *Hudsonia ericoides*, L. grows plentifully at Baiting Hollow ; *Drosera filiformis*, Raf., common, *Hypericum Canadense* L. Var. *major*, Gray, at Long Pond, Wading River, and Edward's Pond. Middle Island.—*Saginia procumbens*, L., very common. *Polygala cruciata*, L., and *P. Nuttallii*, Torr. & Gray, are both common.—*Desmodian laevigatum*, DC., at Manor Station, L. I. R. R.—*Phaseolus helvolus*, L. common, *Galactia mollis*, Mchx., I found one clump of at Long Pond.—*Prunus Americana*, Marshall, I have only met once.—*Aster spectabilis*, Ait., and *A. concolor*, L., both common. *Gnaphalium purpureum*, L., common.—*Pyrola chlorantha*, Swartz, very common in the pine woods.—*Utricularia minor*, L., and *U. intermedia*, Hayne, both growing in a pool together. I notice that these flower in May and the early part of June, while *U. purpurea*, Watt., *U. resupinata*, Greene, *U. inflata*, Watt., *U. gibba*, L., *U. vulgaris*, L., *U. cornuta*, Mchx., and *U. striata*, Le Conte, do not flower until August. I find them all here. *Polygonum Careyi*, Olney, at Long Pond and *P. ramosissimum*, Mchx., borders of salt meadows.—*Sagittaria calycina*, Engelm., Var. *spongiosa*, which I reported last year, proves to be *S. graminea*, Mchx.—*Arethusa bulbosa*, L., common at River Head and Manor.—*Cyperus erythrorrhizos*, Muhl., grows plentifully at Edward's Pond, Middle Island.—*Scirpus subterminalis*, Torr., grows at Deep Pond, Wading River.—*Rhyncospora nitens*, Gray, grows plentifully at Long Pond, with the typical form of *R. macrostachya*, Torr., the one I reported last year was the *diffuse variety*.—*Juncus pelocorpus*, E. Meyer, grows very plentifully here.—*Sporobolus serotinus*, Gray, is very common at River Head.—*Botrychium simplex*, Hitch. sparingly at River Head.

Wading River, Dec. 5th, 1872. Elihu S. Miller.

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